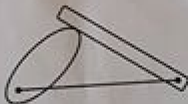
Sheet 1 (Mechanisms)

Q1:

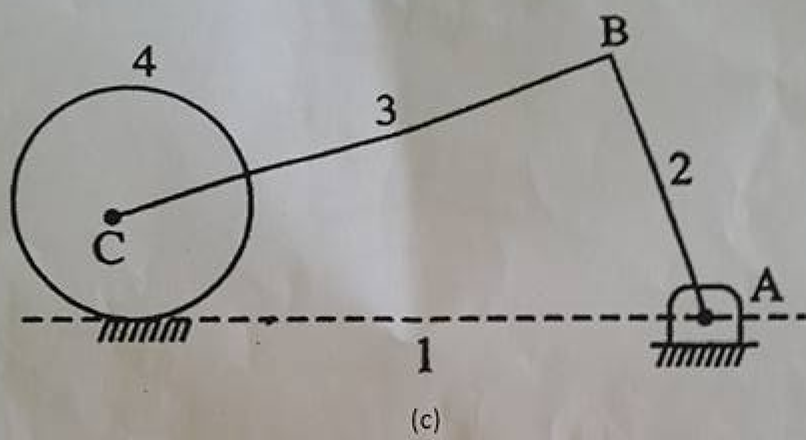
Calculate the DOF of each of the following linkages:-



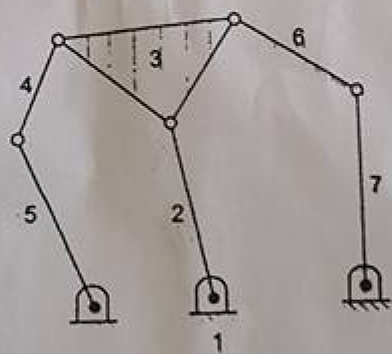
(a)



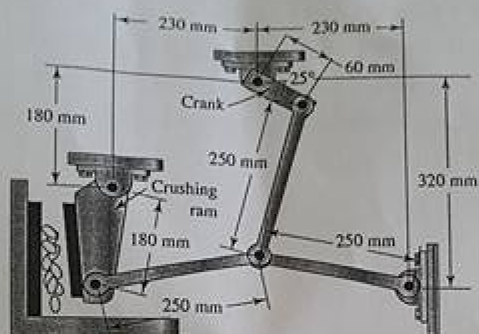
(b)



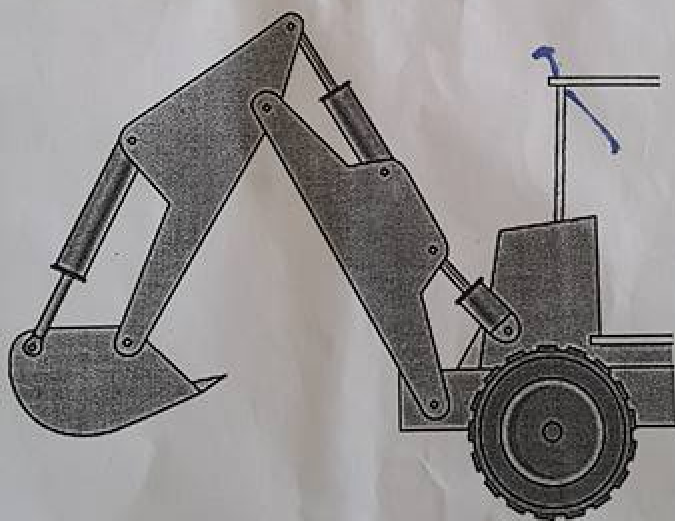
(c)



(d)


230 mm
230 mm
60 mm
25°
180 mm
Crank
250 mm
320 mm
Crushing
ram
180 mm
250 mm
250 mm

(e)



(f)

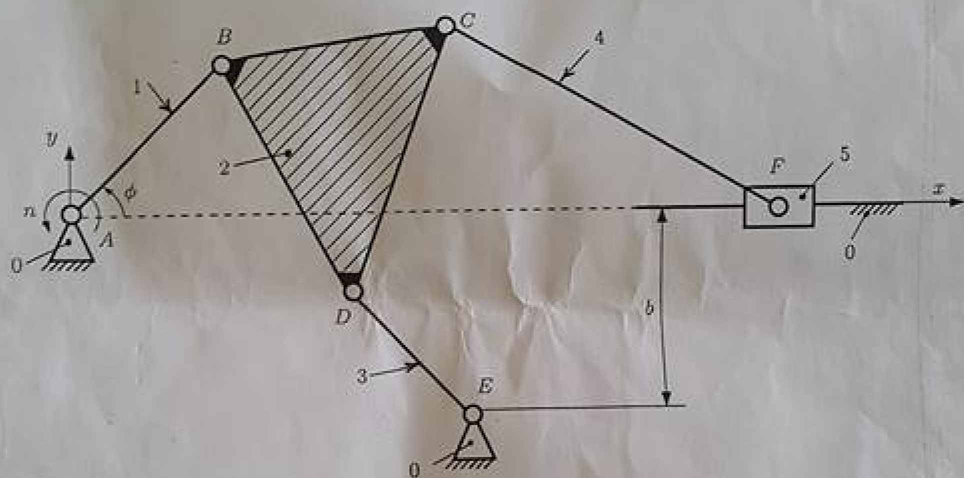
Date :

Q3.

The dimensions for the mechanism are:

AB = 250 mm, BD = 670 mm, DE = 420 mm, AE = 640 mm, BC = 240 mm, D = 660 mm, CF = 850 mm, and b = 170 mm.

The angle of driver link 1 with the horizontal axis is $\phi = \phi_1 = 30°$. Find the positions f the joints and the angles of the links.



Q2.

In a crank and slotted lever quick return mechanism, as shown in Fig. 5.37, the driving crank length is 75 mm. The distance between the fixed centers is 200 mm and the length of the slotted lever is 500 mm. Find the ratio of the times taken on the cutting and idle strokes. Determine the effective stroke also.

